DOCUMENT RESUME

ED 228 196 SP 022 035

AUTHOR Quisenberry, Nancy L.; And Others
TITLE Resources for Understanding P. L. 94-142 and Classroom Management and Behavior. Volume I.
INSTITUTION Southern Illinois Univ., Carbondale. Coll. of Education.
SPONS AGENCY Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE 81
CONTRACT 790-1158
NOTE 56p.; Dean's Grant Project
PUB TYPE Legal/Legislative/Regulatory Materials (090) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Arithmetic; Classroom Environment; *Classroom Techniques; *Educational Legislation; Educational Objectives; Elementary Secondary Education; *Mainstreaming; *Reading Instruction; *Remedial Instruction; Social Attitudes; Special Education; Teaching Methods
IDENTIFIERS *Deans Grant Project; Education for All Handicapped Children Act

ABSTRACT

This document presents an overview of legislation and actions resulting in the passing of Public Law 94-142, the Education for All Handicapped Children Act, and presents information of use to school personnel in mainstreaming. The document's first section traces the history of the treatment of handicapped individuals by society since the beginnings of early Western civilization. The emergence of the mainstreaming concept as an alternative to special class placement is discussed, and citations are made of court litigation which dealt with nondiscriminatory assessment, right to due process, and right to education. Legislation generated by these and other legal confrontations is outlined with brief interpretations of societal implications. In the second section, the organization of the mainstreamed classroom is discussed with emphasis on two major areas of concern for teachers: the structure of the physical classroom environment, and the daily and weekly instructional routine. The third section contains specific remediation techniques which have proved to be effective in improving the reading and arithmetic skills of handicapped students. A bibliography of 29 professional books is included. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED228196

RESOURCES FOR UNDERSTANDING P.L. 94-142 AND CLASSROOM MANAGEMENT AND BEHAVIOR

VOLUME I

Dean's Grant Project
College of Education
Southern Illinois University at Carbondale
Carbondale, Illinois

SIU

1981

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Nancy L. Quisenberry

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP 022 035

Sponsored by Office of Special Education, Department of Education

RESOURCES FOR UNDERSTANDING P.L. 94-142 AND CLASSROOM MANAGEMENT AND BEHAVIOR

Volume I

Office of Special Education - Contract 790-1158

Elmer J. Clark, Dean

Nancy L. Quisenberry, Associate Dean for Undergraduate Studies and Project Director

Sidney R. Miller, Special Education Trainer

John Sachs, Graduate Assistant

Theresa Johnson, Graduate Assistant

College of Education
Southern Illinois University-Carbondale
Carbondale, IL 62901

1981

Acknowledgements

The material in this volume represents the thrusts of the second year of the Dean's Grant at Southern Illinois University-Carbondale. Many people worked in support of the development of these materials. Special recognition should be given to Dean Elmer J. Clark for his continued support and encouragement on the project; to Dr. Sidney R. Miller who provided leadership and the expertise from his knowledge and experience in the field of education; to John Sachs and Theresa Johnson for the many hours in the library collecting information, putting together material for faculty, setting up meetings and all those other extra activities graduate assistants are asked to do; to the faculty responsible for Education 303-The School in Society: Dr. Art Aikman, Dr. Berniece Seiferth, Dr. Arsene Boykin, Dr. Francis Grant, Dr. Hans Jellen, Dr. Eryn Moore, Dr. Robert Buser, Mr. Robert Dunn, and Mr. Jon Steinhoff; to the Center Coordinators and methods faculty who read and evaluated numerous rough drafts of Behavior and Management material; and finally, to the students who willingly evaluated the materials and provided feedback.

The combined effort of all persons involved in the Dean's Grant this year was deeply appreciated.

Nancy L. Quisenberry
Project Director

Table of Contents

	Page
Public Law 94-142 "Origins and Foundations"	1
Special Class Placement vs. Mainstreaming	6
The Law and the Handicapped Student	8
Litigation	8
Legislation	9
Classroom Instruction and Behavior Management	17
Suggested Remediation Techniques in Reading and Arithmetic Skills	35
Reading	37
Arithmetic	45
Bibliography	55

List of Figures

Figure		Page
1	Selected Litigation and Legislation Leading up to P.L. 94-142	11

Public Law 94-142 "Origins and Foundations"

Public Law 94-142 "Origins and Foundations"

When the United States Congress passed Public Law 94-142, "The Education for All Handicapped Children Act of 1975," the Congress stated:

> "It is the purpose of this act to assure that all handicapped children have available to them, within the time periods specified in Section 612(2)(B), a free and appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardian are protected, to assist state and localities, to provide for education of all handicapped children, and to assess and assure the effectiveness of efforts to educate handicapped children."

The essence of this law requires that all handicapped students, regardless of the severity or nature of their disability are to be guaranteed a free and appropriate education in the least restrictive environment.

The Federal Government and the State of Illinois have sought to implement Public Law 94-142 through the publication of rules and regulations. These rules and regulations describe the specific procedures that the schools must follow in order to guarantee that the law is faithfully and informally administered.

The passage of Public Law 94-142 by the 94th Congress has had a major impact on the education of the nation's students. The rationale for Federal involvement in the education process is mitigated by the treatment of handicapped individuals by civilized society, since the emergency of early western civilization.

Kolstoe and Frey (1965) described the evolution of four distinct attitudes which developed between the ancient Egyptian empire to the present:

Extermination, Ridicule, Asylum, and Education. Though these descriptions have partial validity, they are tempered by the recognition that within each period, examples of humanity and a commitment can be identified.

When civilization was in its infancy, the fate of the handicapped was bleak. "Survival of the fittest" was the law that predominated until man began to form social contracts. These social contracts established the common and written laws by which he was to live. The social contract was the initial step in man's efforts to become civilized. Yet, these early societies reacted to the handicapped individuals with fear, superstition, and hostility. The Greeks and the Romans practiced infanticide and exorcisms with individuals who were physically handicapped or who acted significantly different from the rest of society. Their behaviors were in reaction to the belief that the plague of the handicapped individual was "Divine Punishment" (Hewett & Forness, 1977). Wealthy individuals of Greek and Roman civilization maintained "fools" and "imbeciles" in their homes for the amusement of their guests (Payne & Thomas, 1979).

Near the end of the Greek and Roman era, attitudes toward the handicapped again changed. The teachings of such philosophers as Hippocrates and Plato had made their impact on the prevailing customs. Plato's writing, as interpreted by Cronford (1945), reveals Plato's belief that those born handicapped or of inferior parents should be hidden away. Thus, segregation rather than extinction marks a small, but significant shift in society's attitude towards the handicapped.

The growth of Christianity during the Middle Ages had a profound influence on the care given to the handicapped. Mentally retarded individuals were segregated from the rest of society. The church placed them in monasteries and asylums (Kaufman & Payne, 1975). The

emphasis during this period was directed at insuring that the handicapped were more humanely cared for, and when appropriate, taught rudimentary social skills.

The Renaissance period emerged out of this era with all its idealism and beauty. Though attitudes toward the mentally retarded did not drastically change during the Renaissance period, it had a major impact on the attitudes of philosophers and educators that followed this period.

John Locke, during the 1600's, began to espouse a revolutionary new theory, known as "Tabula Rasa" or the "Blank Slate" Theory. In essence, this theory states that all individuals were born into the world with a blank mind, and that the cumulative experiences of living determine how one thinks or behaves. Jean Jacque Rosseau, in the 1700's, advocated that we should train individuals for useful and productive lives. Thus, attempts to educate the mentally retarded to function in our society began to emerge.

Although the treatment of the handicapped remained predominantly within the institution, the emphasis gravitated from basic care to attempts to remediate and rehabilitate the individual. Individual efforts by innovative men such as Ponce de'Leon and Juan Bonet were successful in developing teaching methods for the deaf. Yet, teaching methods designed specifically to assist the mentally retarded were fragmented and poorly defined. During the nineteenth century, pioneers in the field of special education Jean-Marc Gaspard Itard, Edward Seguin, and Maria Montessori, sought to teach handicapped individuals academic and social living skills, and subsequently shattered the presiding skepticism. Various creative teaching methods and strategies were developed by these innovative individuals. Many of the theories

and techniques that they had developed are being followed by a wide variety of educators in today's schools.

We can look back at the nineteenth century as a time when the rehabilitation for the mentally retarded in western culture transferred from thought into practice. Lazerson (1975) noted: "The residential institutions of the nineteenth century are thus generally seen as the first shaping step in the proper care of the mentally retarded" (p. 34). Sabatino and Miller (1979) concurred, stating that special education as we know it today, grew out of the work in institutions by such individuals as Itard, Sequin, and Montessori.

Special Class Placement vs. Mainstreaming

Between 1860 and 1920, some major changes were occurring in the field of education in the United States. One major development of this period was the growth of compulsory education. Obviously, this type of social legislation indicated that the people of the United States viewed education as essential to the growth of individuals and the nation.

Also, during this time period the schools experienced tremendous progress in the education of most of the school population. Yet, there was a certain segment of the school population that was not learning as fast and/or acted significantly different than the majority of the children. In order to teach these handicapped students, it was generally felt that these students should be moved into a "special class." Special class placements can be viewed as an outgrowth of the need for the schools to provide an alternate environment to educate children who are not functioning on the same level as the so-called normal students. It was also thought that special placement would

eliminate problems that regular teachers were experiencing in teaching average or above average students. This philosophy continued to shape the views of regular and special educators up to the mid-1960's. However, there are dissenters such as United States Associate Justice of the Supreme Court, Louis B. Brandeis who stated: "The greatest danger to liberty lurks in the insidious encroachment by the men of zeal, well-meaning, but without understanding." (Olmstead vs. United States)

In the late 1960's, special educators began to question the efficacy of special placement of handicapped individuals. They hypothesized that separating handicapped individuals from their peers was not beneficial to students' academic and social growth and might, in fact, be detrimental to their habilitation. " . . . Let us stop being pressured into continuing and expanding a special education program that we know now to be undesirable for many of the children we are dedicated to serve (Dunn, 1968, p. 5).

The mainstreaming concept began to emerge as an alternative to special class placement.

> "Mainstreaming refers to the temporal instructional and social integration of eligible exceptional children with normal peers. It is based on an ongoing individually-determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional and support personnel." (Kaufman, Gottlieb, Agard, and Kukic, 1975, pp. 40-41)

Unfortunately, the mainstreaming concept was not, and still has not been accepted by a majority of state and local school systems. School systems have been content in allowing the education of the handicapped to continue to be implemented by special educators in separate environments. This attitude was reminiscent of the plight of our black population during the Civil Rights era. In fact, handicapped individuals, special

educators, and advocates of the handicapped, were forced into filing class action suits replicating those suits filed by blacks who sought equal educational opportunity.

The Law and the Handicapped Student

Litigation concerned with equality of education for blacks can easily be seen as a foundation for the litigation that followed concerning handicapped students. For example:

> "In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, when the state has undertaken to provide it, is a right which must be made available to all on equal terms."
> (U.S. Supreme Court decision in Brown, et. al. vs. Topeka Board of Education, et. al. 347 vs. 483 (1954)

The Supreme Court decision in the Brown vs. Topeka Board of Education, et. al., is just one of many landmark cases concerning the education of our nation's children. The following cases represent just a few of the numerous Supreme Court decisions that are considered by most special educators to be landmarks in the quest for equal educational opportunity for our nation's handicapped students.

Litigation

Non-Discriminatory Assessment: Diana vs. Board of Education of California, 1970

Parents felt that their children were misplaced due to the inappropriate assessment instruments used in the evaluation process. This led to a class action suit which resulted in a decision that students must be evaluated in their native language.

Right to Due Process: Marlega vs. Milwaukee Board of School Directors, 1970

This class action suit challenged the right of the schools to expel a child from school without allowing the student to present his/her case. The decision requires that no child be excluded from school without a due process hearing.

Right to Education: Pennsylvania Association for Retarded Citizens vs. Commonwealth of Pennsylvania, 1971

Many states had laws that excluded students from the education process due to their handicaps. The decision of the court insured the right to a free education to all school-aged mentally retarded individuals.

Legislation

Due to these and other cases of litigation concerning handicapped individuals which have confronted our courts, legislation was enacted by Congress.

Rehabilitation Act: Public Law 93-112, Section 504, 1473

Many individuals experienced discrimination in education, housing, employment, transportation due to a particular handicapping condition. Public Law 93-112 specifically prohibits any federally assisted program to discriminate against any persons due to a handicapping condition.

Education Act of 1974: Public Law 93-880, Title VI-B, 1974

The Education Act of 1974 was the first comprehensive law enacted by Congress that specifically dealt with the education of the handicapped. For example, it established the goals of providing educational opportunities to all handicapped children; "The Buckley Amendment" which specified guidelines for access and confidentiality of records; requirements for child find efforts; required that state plans be developed and implemented.

In 1975 Public Law 94-142, also known as "The Education for All Handicapped Children Act," was legislated by the 94th Congress. The purpose of this act is to guarantee that handicapped students shall receive a free and appropriate education regardless of their handicap. Handicapped students, as defined in the Federal Rules and Regulations 121a.5(a), means: those children evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf/blind, multihandicapped, or as having specific learning disabilities, who because of those impairments need special education and related services.

P.L. 94-142 established specific guidelines identifying handicapped students and developing an individual education program (IEP) for each student identified. P.L. 94-142 is one of the most comprehensive education acts that Congress has legislated. (Note: Figure 1 contains a comprehensive list of litigation and legislation leading to the passage of P.L. 94-142.)

Figure 1

Selected Litigation and Legislation Leading up to P.L. 94-142

EVENT	IMPLICATIONS
	Equal Education
14th Amendment to U.S. Constitution, 1868	Insures equal protection of the law (if a state offers a service to any citizen, it must equally provide it to all citizens)
	Limitation of Rights
Watson vs. City of Cambridge, 1893	Students can be expelled for disorderly conduct or imbecility
	Limitation of Rights
Beattie vs. State Board of Education, 1919	Physically handicapped children can be excluded because his presence was determined to have a "depressing and nauseating" effect on other students and teachers
	Equal Education
Brown et al, vs. Board of Education of Topeka et al. Supreme Court Decision, 1954	Assured that those educational services provided to any citizens must be provided to all
	Desegregation
Wolf vs. Legislature of State of Utah, 1969	Denied legality of segregating handicapped individuals from educational services (two TMR children were being "served" via the Dept. of Welfare)
	Right to Placement
Doe vs. Board of School Directors of the City of Milwaukee, 1970	Declared use of waiting lists to be illegal
	Non-Discriminatory Assessment
Spangler vs. Board of Education (Southern California), 1970	Questioned validity of use of I.Q. test on non-whites
	Non-Discriminatory Assessment
Diana vs. Board of Education (California), 1970	Class action suit determining need to evaluate children in their native language

	Right to Due Process
Marlega vs. Milwaukee Board of School Directors, 1970	Required that no child could be excluded from school without a due process hearing
	Right to Placement
Hobsen vs. Hansen (Washington, D.C.), 1971	Declared tracking systems illegal and required reevaluation on a regular basis
	Right to Education
Pennsylvania Association for Retarded Citizens vs. Commonwealth of Pennsylvania, 1971	Insured right to free education to all school age mentally retarded, regardless of their placement. Established due process outline
	Right to Education
Mills vs. Washington, D.C. Board of Education, 1972	Outlawed denial of access to educa- based on lack of available public funds
	Right to Education
North Carolina Association for Retarded Citizens vs. State of North Carolina, 1972	Included homebound instruction costs in definition of free public education
	Right to Education
Coalition for the Civil Rights of Handicapped Persons vs. State of Michigan, 1972	Required state mandatory special education law
	Non-Discriminatory Assessment
Walton vs. City School District of Glen Cove (N.Y.), 1972	Placement cannot be based solely on anecdotal records
	Right to Placement
Lebanks vs. Spears Louisiana, 1973	Indicated need of appropriateness of program and placement in least restrictive environment
	Right to Rehabilitation
Public Law 93-112, Sect. 504, 1973	Insures non-discrimination on the basis of handicap

	Educational Planning
Illinois State Plan, 1974	Requires development of educational plans including specific objectives for each child
	Education Act of 1974
Public Law 93-380 Title VI-B, 1974	Establishes goal of providing educational opportunities to all handicapped children. Established guidelines for due-process. "Buckley Amendment" establishes guidelines for access and confidentiality of records. Establishes requirements of child-find efforts. Requires State Plans to be developed and implemented
	Free and Appropriate Education
Public Law 94-142, 1975	Establishes guidelines for IEP and procedural safeguards
	Accountability
Peter W. vs. San Francisco Unified School District, 1976	Schools cannot be held liable for failing to teach a student to read
	De-Institutionalization
Pennsylvania Association for Retarded Citizens vs. Pennhurst State School and Hospital, 1978	A large institution was forced to decentralize its population. (Integrate people into community, i.e., group homes)

Ironically, social legislation such as Public Law 94-142 and all of the litigation that preceded it are based on the 14th Amendment of the United States Constitution, which not only guarantees an individual an equal right to services provided by a state, but also included a clause that specifically guarantees the individual the right to "due process." Due process of law is defined as: "A right to any law applied reasonably and with sufficient safeguards such as hearings and notice to insure that an individual is dealt with fairly." (Freidman, 1976, p. 159)

Public Law 94-142 has included procedural safeguards to insure that the rights of the handicapped are protected.

> "Whenever a complaint has been received under paragraph (1) of this subsection, the parents or guardian shall have an opportunity for an impartial due process hearing which shall be conducted by the state educational agency or by the local educational agency or intermediate educational unit, as determined by state law or by the state educational agency . . ."
> (P.L. 94-142, Section 615(2)

The ultimate purpose of the due process procedure is to avoid wasting the time and money of our courts while still insuring that appropriate procedures are maintained to arrive at competent decisions concerning the education of the handicapped.

Supreme Court decisions alone are not persuasive enough to produce the desired changes in attitudes concerning the education of the handicapped. Various other methods are also necessary to affect change: "decisions in lower courts, enactment of social legislation by Congress, and policy statements by powerful national and international organizations," (Suran and Rizzo, 1979, p. 15). These powerful agencies, once motivated, began to initiate changes.

Education of the handicapped can no longer be brushed aside by administrators or school systems due to the impact of P.L. 94-142. "In this sense, P.L. 94-142 becomes the national vehicle whereby the promises of the state and local policy that we heard for so long, may become a reality." (Abeson and Zettel, 1977, p. 114)

Passage of P.L. 94-142 has already begun to initiate changes in our education system. Architectural barriers that climinate handicapped students from programs are being removed. Teachers' training programs for regular educators are including information concerning the education of the handicapped. Handicapped students who previously were denied an appropriate education are currently provided Individual Education Plans and a greater percentage are being taught in the educational mainstream. These are only some of the changes that are occurring due to the cumulative effect of litigation and legislation that lead to the passage of "The Education for All Handicapped Children Act of 1975."

Classroom Instruction and Behavior Management

Classroom Instruction and Behavior Management

The organization of a classroom environment is the first step a teacher must consider before students enter the classroom. Two of the areas of concern expressed by classroom teachers are: 1) structuring of the physical classroom environment and 2) the daily and weekly instructional routine.

I. Physical Environment

A. Sensory Stimuli

The physical environment can be arranged in a manner which enables the teacher to facilitate the student's learning. The environment can either increase or decrease the effects of various types of sensory stimuli and thus impact student performance in the classroom. The type of sensory stimuli a student is exposed to can often effect his or her ability to function appropriate in the school environment. There are two primary types of stimuli which effect the student in the classroom. These are visual and/or auditory stimulus most frequently cited as contributing to a handicapped student's performance.

1. Visual Distractability

The location of doors, windows, wall displays, teacher's desk and group-work areas are of critical concern as teachers seek to appropriately place handicapped students in the classroom. Among the factors teachers should consider in placing students are:

a. Keep desk turned away from classroom traffic.

b. Provide study carrels or screens for students who need or desire an environment that will help them filter out visual distractions from their work area.

c. Present visual cues, one at a time and in sequence to avoid confusion.

d. Keep work area as clutter-free as possible

e. Present one assignment at a time to avoid confusing students who's sensory input process may be impaired.

2. Auditory Distractability

a. Reduce the amount of information presented auditorily to help the handicapped student follow directions.

b. Use earplugs or muffs to assist students easily distracted by noise.

c. Reduce, and when possible eliminate, ambient noises in the room.

B. Classroom Designs

There are a variety of classroom arrangements that a teacher can use to develop an educational milieu which is conducive to handicapped learners. The following suggestions are some of the options available to teachers:

1. Learning Centers

The learning center is a classroom design which facilitates individualization. It is a specific area(s) in the classroom where students can go to work on perceptual motor, language, and conceptual skills. It is also a location where students can work at their pace on activities of their choice. Each learning center can contain materials and resources related to a specified

content area. There are various types of centers that can be included in a classroom arrangement. The following are five types of centers most often used by teachers: a) creative or exploratory, b) social, c) basic skills, d) auditory/visual centers, or e) study carrels.

a. Creative or Exploratory

The creative or exploratory center may include language arts, music, art, craft activities, science or any combination of those mentioned above.

b. Social Center

The social center includes a variety of audiovisual aides, graphics, games, puppets and manipulatives designed to facilitate student's interaction with other members of the class. It should contain a wide range of materials that enhance students' interests, abilities and their social growth.

c. Basic Skills Center

This center can be broken down into several sections for different subject areas or just one that combines different skills. A basic skills center contains activity task cards which state the main goal, specific objectives and activities. Activities may be close-ended activities such as: math drill cards, phonics lessons, or sentence scrambles. Activities can also be open-ended tasks such as: make a list of key words that the students need to know for a specified subject, i.e., science. Put the words on tape, have

the students listen to the tape, write the words and pronounce them repeatedly with and without the tape's assistance.

d. Auditory/Visual Center

The auditory center is often referred to as the listening center. This is a center frequently used by non-readers when listening to work which they can not read from the printed page. It can also be used by readers as well as non-readers for individual assignments.

The use of visual aids in the classroom enhances instruction, adds variety to the teacher's presentation and may enhance the student's interest level.

e. Study Carrels

Study carrels are specially constructed classroom cubicles used primarily with students who are easily distracted by visual and auditory stimuli. These students need a quiet, private area to best achieve assigned tasks. These booths are usually simple structures about four feet square with about six feet high partitions across the back and on two sides. Study carrels are great facilities for individualized instruction, listening center activities, basic skills activities, individual learning packets and individual contracts.

II. Teaching Aids

The following aids can be used with handicapped populations. Care, however, should be used in selecting aids that match students' learning styles.

A. Tape/Cassette Recorder

Tapes are inexpensive, easy to use, and can be reused. Directions for lessons when recorded will enable students to work independently and enable the teacher to give a student individual attention without having to work directly with the student at the time of instruction. Thus, while the handicapped student is listening to the tapes and following through on the instructions, the teacher can be working with the other students in the classroom.

B. Slides

Slides are inexpensive and they can be easily employed to convey information. Teachers can make their own slides to help students visualize the images of a poem, story, song lyric, etc. They may use the slides to show different events occurring during the school year; use them to enhance musical presentations and to illustrate abstract problems. Students can also make these slides and filmstrips, given appropriate directions. They can use discarded filmstrips by bleaching and drawing on them with markers. Slides or filmstrips of this kind accompanied by taped music can enrich the learning process. Pictures from magazines and books that are photographed can also be made into slides and used to supplement lectures.

C. Video Tape

Video tapes permit students to view their own performance as well as evaluate themselves. Demonstration of manipulative skills or use of equipment can be viewed by an entire class

or individually repeated while the teacher works on another project or activity. Teachers can present material in programmed format in which students are given time to respond to questions and then present answers before proceeding. This approach is more expensive than some others previously discussed.

D. Filmstrips and 16mm Film

Filmstrips and 16mm film add variety to classroom activities. They are excellent tools to use in all classes where illustrations and demonstrations are needed in order to bring clarity or emphasis to a specific item or point.

E. Overhead Projector

The overhead projector can be used by both teachers and students to show illustrations. This approach allows the teacher to face their audience while doing the illustration. Information can be put on transparencies, filed away and used repeatedly.

F. Chalkboard

The chalkboard like the overhead can be used by both teacher and students for illustrations of abstract concepts. Unlike notebook paper or worksheets, the chalkboard allows the students to verbally explain their illustrations thus allowing the teacher to give the students immediate feedback. Sometimes students gain a better understanding of a given problem when it is illustrated and explained by other students.

The selection of instructional aids must be pursued with the specific handicapped students in mind. For students with strong visual processing skills, the use of slides, videotapes, and overheads are appropriate. For students with strong auditory

processing skills, audiotapes and records are recommended teaching aids. The inappropriate selection of teaching aids may impair learning, and so, teachers must be selective in choosing materials for clasroom instruction.

III. Daily and Weekly Instructional Routine

The instructional organization as well as the physical organization of the classroom can influence a student's academic progress and social behavior. However, an ideal arrangement for all situations cannot be specified. Each teacher should consider ways in which organization, be it physical or instructional, contributes to management of his/her students. The teacher also needs to be cognizant of aspects of the daily routine that are relevant to classroom management. Regardless of which procedure a teacher chooses to manage his/her classroom, it is beneficial to the teacher to give specific directions, ignore disruptive behavior when appropriate, and praise desired behavior.

Specific areas to be considered in the daily and weekly instructional routine are: a) preparations for instruction, b) writing instructional objectives, c) alternative methods of presenting curriculum content, d) alternative ways of evaluating student progress, e) individual activities, and f) motivation (fostering a desire to learn).

A. Preparations for Instruction

In preparing for instruction, it is first necessary to assess the student's level of mastery in academic areas. Assessment

of a student's academic abilities include formal and informal procedures. The following list represents some specific areas of concern:

1. Reading
   - Being able to receive and perceptually process information
   - Sounding out words
   - Vocabulary knowledge and usage
   - Oral reading comprehension
   - Silent reading comprehension
2. Language Arts
   - Punctuation usage
   - Grammar usage
   - Dictionary skills
   - Written expression
3. Arithmetic skills
   - Computation
   - Concepts
   - Reasoning:
     Concrete
     Abstract

After assessing the student's abilities and the conditions under which the student is able to demonstrate mastery, list the skills that the student possesses or has failed to master. It is then necessary to describe how deficit skill areas can be addressed so the student can demonstrate mastery on a specific task or competency area. Observation of student's performance can generate numerous ideas for

teaching strategies. An effective strategy is to use student's strengths to learn skills that are currently deficient.

B. Instructional Objectives

Before writing instructional objectives for exceptional children, it is necessary to analyze the student's level of functioning as well as task analyze the curriculum. Analysis of the student involves sorting out strengths and weaknesses; and examining how the students can best learn what is being taught. Task analysis of the curriculum involves sorting out specific tasks that are vital for the students to accomplish or learn; citing specific prerequisite skills involved and sequential steps necessary to reach the stated goal(s).

In writing instructional objectives, the following are some factors to consider:

1. Prerequisite skills needed
2. Developmental age of learners
3. Chronological age of learner
4. Learner interests and needs
5. Physical status of learner
6. Sociocultural and other environmental factors
7. Availability of materials and resources
8. Availability of medical and paramedical consultative treatment services
9. Parental concerns and priorities
10. Teacher strengths
11. Future placement goals for the learner

12. Community values and attitudes
13. School board policies
14. State and federal legislation

C. Alternative Methods of Presenting Curriculum Content

Hartwell, Wiseman and Reusen (1979) gave the following as possible alternatives to presenting curriculum content:

1. Guest speakers - to discuss topic which the class is presently studying
2. Small group discussions
3. Programmed instruction - using auditory and/or visual aids
4. Field trips - take students to a courthouse to observe courtroom procedures when studying the local judiciary system
5. Peer tutoring - to be used both in the classroom and at home
6. Buddy system - one student is assigned to assist another student with various tasks
7. Contracts - set up prior expectations for achievement for grades and/or classroom behavior in which performance criteria and reinforcements are clearly delineated
8. Projects - hands-on approach - to help establish academic concepts through various activities
9. Learning Centers - as mentioned earlier, learning centers are also an instructional technique where basic skills and concepts are taught through self-motivating materials

10. Note taking - let high achievers take notes with carbon paper so that the notes can be shared with physically handicapped, blind, or deaf students
11. Supplementary texts and other material - high interest and low vocabulary reading materials
12. Use of three dimensional materials to illustrate mathematic processes, language concepts, and other concepts related to such areas as science, social studies, and physical education

D. Alternating Ways of Evaluating Student Progress

1. Teacher reads test - student responds orally into a tape recorder or to the teacher
2. Taped test - students listen to pre-recorded tape of the test and respond on answer sheet or into a second tape recorder
3. Self-evaluation - student uses answer key to get immediate feedback on questions they have responded to either orally or in writing
4. Make all closed book tests - multiple choice, true/false. Matching activities are not recommended for handicapped students who are more likely to provide a wrong response and then learn inappropriate responses.
5. Give open book tests - allow students to use textbooks, notes, study guides, etc. Construct tests so that only short answers are required. The teacher must keep in mind that students' response problems may vary from inability to remember information to inability to draw inferences.

6. Give alternative projects - a student who is good in art does a drawing to enhance a concept or unit of study
7. Student's choice - allow the student to decide how he wants to be evaluated, but never allow the student to decide whether he or she will be evaluated

D. Individual Activities

Individual activities are assignments that students can complete at their desks or at a specific learning center. Usually these activities appear in the form of a) contracts, or b) individual activity packets.

A. Contracts

A contract is an agreement for, by, and with students. It provides opportunities for the student to participate in the development of his or her instructional and behavioral goals, objectives, and activities. The more specific purpose of the contract is for the teacher and student to articulate specific activities such as the level of performance required, the time required for completion, the environment the work will be conducted in, and the demeanor to be demonstrated by the student. In addition, the contract will frequently contain the contingencies to be used in recognition of the student's performance. With the choices provided, there is now a means of promoting independence and responsibility for learning. Contracts allow the teacher to develop activities on an individual basis for students.

B. Individual Activity Packets

An individual activity packet is a self-instructional unit designed to aid students in learning a basic concept or behavior by dividing it into several attainable components. It is designed for specific ability levels and provides flexible activities students may choose for reaching the stated goals. The students proceed at a predetermined pace. The intention of the format is to insure success. Continuous evaluation of the student's performance is critical to this process. The essential components are:

1. Preassessment of student's achievement and behavior level relative to the achievement and behavior sought.
2. Development of specific goals and objectives which are measurable.
3. Establish series of activities designed to provide the handicapped student a tightly sequenced series of learning experiences.
4. Post-test student's performance level.

The individual activity approach is a valuable tool for integrating the handicapped student into the regular classroom. It enables the student to work at his/her appropriate pace; it provides additional material to insure learning; and it allows the student to work alone or with a group.

F. Motivation (Fostering a Desire to Learn)

The following points should be considered:

1. Activities should be designed in order that students can experience success. Successful experiences are frequently motivating.
2. The student must have necessary prerequisite skills for the new task-at-hand, to insure success.
3. The student should have a reason for participating in an activity. This can be accomplished by use of peer and social pressures, group discussion, or relevance of activity to the student's specific goals and interests.
4. Allow the student(s) to help the teacher in establishing goals, objectives and activities. If a student is placed in a situation in which he is pressured to achieve beyond reasonable expectations, failure and loss of interest often results.
5. Provide appropriate reinforcement following a behavior that the teacher is seeking to increase and strengthen.
6. Give immediate reinforcement to progress made toward the final goal.
7. Assure stability by changing the reinforcement from a continuous to a variable schedule once a behavior has been established.
8. Require each student to perform certain types of learning activities several times so that the process and content become firmly established in the student

repertoire. Such efforts help the teacher reduce the possibility of eliciting random responses from the student, enhances retention and transfer, and provides a means for increasing the student's general response repertoire.

9. Practice should vary according to type of material to be learned and student needs. Practice should be distributed so that it does not become boring. Encouraging active involvement by the learner frequently facilitates learning. In addition, it:
   a) aids the student in attending to task-at-hand,
   b) alerts the student to the importance in the teaching - learning process,
   c) provides feedback; serves as a means of diagnosing the extent of learning which has taken place as well as any strengths or unusual weaknesses. And finally, it provides all involved more opportunities for meaningful reinforcements for desired behavior.
10. Initially stress accuracy and not speed, quality and not quantity. It will help students develop more pride in their work.
11. Use the student's strengths and encourage participation in activities that will strengthen areas of weakness.
12. Offer students opportunities to repeat and practice experiences in a variety of ways. This is necessary because stimuli rarely occur repeatedly in the same

form. Students should be exposed to a variety of stimuli related to an event in order to become aware of the dimensions of a problem and to allow for a full opportunity to inter-relate relevant stimuli.

Suggested Remediation Techniques in Reading and Arithmetic Skills

Reading

The following are some recommendations for personnel working with handicapped students who need to be able to read stories or gather information.

A. Rework reading material so that it is presented at the student's performance level.

1. As an example, the following sentence could be edited to be more easily read: "Although the child was only 9 years old, the people in the town were impressed with his ability to grasp ideas." Revised, it might read: "The 9 year old child was able to understand ideas that seemed very hard."
2. When the student cannot understand a noun, try and match a picture of the object with the noun. As an example, a picture of a screwdriver next to the noun screwdriver.
3. Tape the story the child is expected to read, then let the child follow along in the book while listening to the tape. Upon completion of this task, then ask the child to read out loud.
4. Make sure the interest of the material is appropriate to the student's background, age, and interest.
5. Some students will always have difficulty with reading. Some authors have suggested that students who cannot effectively learn to read be treated as though they were functionally blind. This means the school would educate

them as though they were blind, using talking books, or enlisting a teacher of braille who can provide the student braille instruction.

B. Language Experience Approach

The language experience approach has been found by many educators to be of help in teaching students of all ages. This approach emphasizes the strategy that the student's own observations and language should be the focus of the instructional process. From the observation and discussions, the teacher or aide can record the information or story recited. The recorded information or story can then be read by the student. In this way, information can be transmitted and the process of reading can be encouraged. As an example, a lesson on energy conservation can begin by showing the class pictures on various products and techniques used to retain heat in a home. Using a transparency, the teacher with the student's assistance, labels each product and technique, thus, associating the word or phrase with the concept being taught. Then, using the labels, explanations of the products or technique can be written on the transparency, based on classroom discussion. After reading the material from the transparency with the class, the teacher or aide can have the written material transferred to paper so that the students can read material they helped create.

C. Psychoneurological Approach

The fundamental principles that guide the remediation of psychoneurological learning disorders are:

1. Teaching must be individualized.

2. Teaching according to readiness in a balanced program is essential.
3. Teaching must be as close to the level of involvement as possible.
4. Consider that input precedes output as a basis for classification or grouping.
5. Teach to the tolerance level, avoiding overloading in particular.
6. Use multisensory stimulation when appropriate and within the student's tolerance level.
7. Raise the deficits without undue stimulation or demand on the disability itself.
8. Provide training in perception when needed.
9. Control important variables such as attention, rate, proximity, and size as needed.
10. Develop both the verbal and nonverbal areas of experience, as appropriate.
11. Guide the approach by both behavioral criteria and psychoneurological considerations.

This approach does not advocate any one particular reading instructional strategy. The belief is that appropriate materials and procedures must be used, and only the teacher can determine what constitutes appropriate.

D. Associated Method

McGinnis (1963) employs the simple-to-complex approach in teaching reading and language to the student. Simple acts

are taught first and then combined and built into acts requiring more complex expression and understanding. The Association Method is based upon five major principles:

1. Words are taught by a phonetic or elemental approach.
2. Each sound is learned through emphasis on precise articulation production.
3. The correct articulation of each sound is associated with its corresponding letter-symbol written in cursive script.
4. Expression is used as the foundation or starting point in building a reading language.
5. Systematic sensorimotor association is utilized. As the student moves from learning of single speech units (phonemes) to more complex speech units (morphemes), the principle of systematic association of motor skills and capacities is more fully utilized. The following steps illustrate the procedure:
   a) The child looks at the written noun word and produces each sound contained in the word in the sequence in which it is written.
   b) The child matches the picture or the object represented by this word to the written form of the word.
   c) The technique of simultaneous talking and writing is employed as the child writes the word and articulates each sound as he writes the letter(s) for it.

d) After the teacher says the word aloud (first broken into sequence of separate sounds and then blended into a word unit), the child repeats the same procedure and then matches the object or picture to the written form of the word.

e) The teacher presents pictures representing the nouns already taught, and the child must say the name of the object from memory without the aid of lip reading, auditory stimuli, or written form.

E. Alphabetic Approach

The Alphabetic Approach proceeds from teaching the sounds of the letters to building these letters' sounds into words. The technique aims to establish close associations between visual, auditory, and kinesthetic tracings in the brain. The approach stresses the following points:

1. The remedial pupil should do no reading or spelling except with the remedial teacher. The schedule should insure that the student be out of the classroom when his/her class is having reading and spelling.
2. The steps of the procedure should be followed rigidly, since they are a "series of logical sequences, the omission of any one step which will jeopardize the complete success of the procedure." To use the technique effectively, the teacher stresses that one must "begin at the beginning."

The approach makes use of six basic combinations of the visual, auditory, and kinesthetic modalities. The occasional use of tactile stimuli through finger-tracing, is recommended; the

procedure is not necessary to the word-learning program. Tracing involves kinesthetic rather than tactile stimuli. The six basic patterns for integration of fundamental associations are these:

V-A Translation of visual symbols into sound, vocalized or not.

A-V Translation of auditory symbols into visual image.

A-K Translation of auditory symbols into muscle response, for speech and writing.

K-A Movement of a passive hand by another to produce a letter form, in order to lead to the naming or sounding of the letter.

V-K Translation of visual symbol into muscular action of speech and writing.

K-V The muscular "feel" of the speaking or writing of a letter, in order to lead to association with the appearance of that letter.

F. Visual, Auditory, Kinesthetic, Tactile Approach

The Fernald method allows the student to be taught in an individual manner. Students with sensory defects as well as those who learn by visual methods soon adapt to conditions of the remedial program. The stages of the hand-kinesthetic approach are:

1. The identification of a method by which the child can learn to write correctly.
2. Motivation of writing.
3. Reading by the child of the printed material that replicates the written material.
4. The extensive reading of other compositions.

Stage One

In stage one, the student is allowed to select a word he wants to learn, regardless of its length. The word is written for the student with crayon in plain, blackboard-sized script or print. The student traces the word with his finger and says each part of the word as he traces it. The process is repeated until the word can be written by the student without his looking at the copy. The pupil is allowed as much time as necessary.

The word is written on a rough grain paper first, and then it is incorporated into a story which the student composes. The story is typed, and the student reads his printed story to the teacher. The child places the word or words that have been learned by tracing in his word-file. This file is arranged alphabetically, as the student learns the alphabet. The practice is excellent training for learning how to use the dictionary as well as for learning the letters of the alphabet. In cases of extreme disability every word used in the first composition may have to be learned by tracing. The student soon gains sufficient skill and progresses into the second stage. Pertinent points relative to stage one are:

1. Direct finger contact in tracing. The student may use one or two fingers in tracing. Learning takes place more rapidly when the student uses direct finger contact in tracing rather than when he or she uses a pencil or stylus.

2. Writing the traced word from memory.

3. Writing words as units.

4. Using words in context.

Stage Two

Tracing is no longer necessary in stage two of the remedial work. The student has developed sufficient skill to learn words by looking at the word in script, saying the word aloud as he or she looks at it, and then writing the word without copying. The student continues to write freely and to read the printed copy of his work. Writing becomes easier and the stories become longer and hopefully more interesting. The student is allowed to write on any subject that interests him.

The important connection between stages one and two is that the child continues to vocalize the word he is learning. The student must establish the connection between the sound of a word and its form so that visual stimulation will immediately stimulate vocal recall.

No limit on the length of the tracing period is established since the student usually stops tracing gradually. A decrease in the number of tracings needed to learn a new word is observed first; then a few short words are learned without tracing. Eventually tracing is no longer necessary.

Materials should not be simplified to a point below the intelligence level of the student, either in the area of vocabulary range or complexity of subject matter. The student

is more highly motivated when reading and writing somewhat difficult material rather than when confronted with material that is below his mental level.

Stage Three

The student learns directly from the printed word in stage three. The student looks at the word and is able to write the word without vocalizing or copying. In this stage, books are presented; the student is permitted to read from them and is told the words he or she does not know. When he or she is through reading a section, the new words are reviewed and the words then are written from recall. A check is made later to determine whether the words have been retained.

Stage Four

The fourth stage begins when the student can generalize and make out new words from their resemblance to known words. The student's interest in reading increases with his reading skill. The student is never read to either at home or at school until he has achieved normal reading skill. The developer of the approach does not object to reading to the student after he has developed normal reading skills, since by this time, the student prefers to read by himself. Usually he or she finds that reading for himself is faster, easier, and more pleasant.

Arithmetic

The major goal when teaching arithmetic skills is to help students develop some consistent methods for solving number-related problems which are encountered in everyday life.

It is essential that when a teacher presents new material to an academically handicapped student, he or she first starts with concrete experiences, then gradually introduces the abstract concepts. For example, when teaching addition, first use concrete objects, i.e., sets of colored sticks or blocks; then move to more structured material such as the abacus, cuisenaire rods, counters, die or playing cards. The next step would be introduce abstract problems using illustrated drawings. Following the discussion of the interface between the objects and the rote instruction on the use of numbers or illustrations, concepts can be introduced. Although subtraction is the opposite process of addition, the teacher can follow the same procedures discussed for addition, because this approach is amenable to teaching many different concepts and processes.

Multiplication and division require a great deal of rote memory; both processes are extremely difficult for many handicapped students. The teacher must consider the problems of teaching multiplication and division when integrating the handicapped student in regular math classes if mainstreaming is to be successful. The teacher should make every attempt to use practical examples in order to make multiplication and division relevant. Requiring students to verbalize and explain problem-solving operations enhances skills. It is important that students learn rote computational skills and how to apply these skills to practical situations. Rote learning will be enhanced by teaching the student how to use a calculator or a times table chart, it is recommended that the teacher use instructional time to explain and clarify what multiplication and division processes are and use examples

of how the processes may be applied to real life situations, i.e., shopping at a grocery store and depositing or withdrawing money from the bank.

The teacher should present one new concept at a time, and continue to teach this concept until the students have reached a predetermined level of mastery. However, when a student reaches a frustration level in working on a given problem before mastery, it is advised that the student be given another task that guarantees success, i.e., review work previously mastered. Keep in mind that handicapped students have difficulty with abstractions and presenting more than one concept at a time creates frustration.

A. Computational Skills

Arithmetic instructions help students develop some consistent methods for solving number-related problems which are encountered in life situations. The following are sequential steps that have been recommended by various practitioners.

1. Precomputation Skills

   a. The student learns to associate numbers with objects, such as blocks or sticks.

   b. Once the symbolic purpose of the numbers is established, the student is encouraged to develop rote learning.

   c. Then the students learn to recognize different numerals and to write these numerals.

   d. One-to-one correspondence is one of the most important precomputation skills that a student needs to learn (matching of similar objects; later increase the difficulty of the task by shifting dimensions of the objects which the students are to match).

e. Learning to write numbers from one through ten is the activity which bridges the gap between precomputation and computation.

2. Computation

a. Addition - forms the basis for arithmetic operations. First, addition should focus upon the concrete (adding one thing or one number to another). Some manipulatives may be used such as counters, cuisenaire rods which can be used directly for counting in the addition process, and an abacus, which is the ancient Egyptian counter containing different colored beads. The abacus can also be used in teaching subtraction, multiplication and division skills.

b. As a last step in addition, students need to be able to represent the process of addition using symbols and signs (+, plus). The term plus is an introductory term used to explain the process. Although not directly involved in addition or computation per se, before, after, between, more, and less are terms that need to be learned by the students. An understanding of zero and its symbol (0) should be introduced at this point.

3. Subtraction

Subtraction is the opposite process of addition. Just as "plus" is the introductory term for addition, "minus" is the introductory term for subtraction. Initial instruction should start in a concrete manner with a gradual fading to abstractions or number symbols.

The act of borrowing from one place value to the next is one of the most difficult parts of the subtraction process for academically handicapped students to grasp. Example, many academically handicapped students fail to understand why one cannot switch the one and four around when subtracting 24 from 51. The reason for this confusion is that the place value of the particular numbers is not understood. It is an abstraction of these students. Initially they need to be shown that by regrouping the numbers in question, the lesser number can be subtracted from the greater number. Example, subtract 5 from 22. By regrouping 22 into two tens (20) and two ones (2), and then changing this figure to ten (10) and twelve (12), it is easy to subtract 5 from twelve and add that number to the 10 which we did not use, to get the answer 17. Once a student understands that the 2 in 20 really stands for two tens, it will be much easier for him to borrow. Another way to help academically handicapped students to understand borrowing is to show the relationship of carrying in addition to borrowing in subtraction. This can be done using examples similar to the following:

10	8	21	14	30	14
- 2	+ 2	- 7	+ 7	- 16	+ 16

The first numbers of each set show the borrowing operation while the second numbers show the carrying operation. Once a student understands this relationship, he can check his work by reversing the original operation used.

4. Multiplication and Division

The teacher must consider teaching multiplication and division if integration of the handicapped in regular math classes is to become feasible. The teacher should make every attempt to use practical examples in order to make multiplication and division relevant. Requiring students to verbalize and explain problem-solving operations enhances skills. It is important that students learn rote computational skills and how to apply these skills to practical situations. Rote learning may be promoted by teaching the student how to use a calculator or a times table chart. It is recommended that the teacher use the teaching time to explain and clarify what multiplication and division processes are and use examples of how the processes may be applied to the grocery store, gas sation, or bank. In all cases the use of three dimensional objects and illustrations should be regularly employed in the institutional process.

Multiplication may be thought of as a faster and more efficient way to add. It is faster and easier to multiply one number times another (example 5 times 6) than it is to first write five six times and then add the fives. There are other similarities between multiplication and addition. Carrying from one place to another in multiplication is much the same as in addition. Care must be taken when multiplying two place or greater numbers by a two place or greater number, because as one adds downward each number must be in a specific place or the equation will end up with a wrong answer. Reversibility is another similarity

between multiplication and addition; and that is, one ends up with the same answer regardless of where the particular numbers are placed in the original combination:

$2 + 4 = 6$ or $4 + 2 = 6$ $\quad$ $2 \times 4 = 8$ or $4 \times 2 = 8$

Instruction in multiplication should focus initially on concrete examples. Later the concrete examples lead to practical examples which vary in abstractness.

Division, being the opposite of multiplication, requires many of the skills and manipulations learned in multiplication.

It is advised when beginning instruction in division to require the student to check all answers by multiplying the divisor by the answer. Example, if the student divides 20 by 5 and gets the answer 4, the 5 should then be multiplied by the 4 to determine whether the answer is actually 20. By going through this process the student will be able to develop a greater understanding of the relationship between multiplication and division.

5. Reasoning Skills (Word Problems)

Skills formed in the area of reasoning enable a student to understand when to use certain math tools. Some ways for students to perfect reasoning abilities in math are: 1) understand math terms; 2) find the significant clue words which indicate what operation is to be performed in solving the problem; 3) verbalize the problem as much as possible; and 4) talk through the solution of the problem.

Often an academically handicapped student will understand most of the terms which he works with on a daily basis; however,

when confronted with problems which do not use terms exactly like those which he or she is familiar with trouble occurs. Thus, all necessary mathematical words should be a part of the student's vocabulary lessons.

Given the following problem: Monica has twenty-eight cents. She used six cents to buy milk and a dime to buy cookies. How much money does Monica have now? While the student may be able to read and understand the words in the problem, the problem does not give obvious directions as to what operation should be performed to arrive at a solution. In this problem, the clue words are "has," "used," and "buy." "Has" tells the amount Monica started with; thus it is the amount which is to be added to or taken away from. "Used" and "to buy" indicate that money was spent; therefore, subtraction is the process which should give the solution to the problem.

For many handicapped students, reading is a difficult and frustrating task. To reduce frustration, it is recommended that the teacher: a) read the problem to the student, b) use a peer to read the problem, c) tape record problems. These types of activities still require that the student complete the tasks.

The teacher should formulate and ask questions about a given problem, thus encouraging the student to verbalize possible solutions. The student should be encouraged also to ask questions which will lead to a solution. Consequently, once a student has gone through several verbal exchanges, he will be in a position to form a tentative solution.

The most effective ways to develop and enhance reasoning skills in math involve clearly defining the terms used, finding significant clue words, and using verbal mediation strategies to work through to the solution of a given problem.

Bibliography
(Professional Books)

1. Engelmann, Siegfried, Preventing Failure in the Primary Grades. Science Research Associates, Inc., Chicago, Illinois, 1970.

2. Gearheart, B. R. Learning Disabilities: Educational Strategies. The C. V. Mosby Company, St. Louis, Missouri, 1973.

3. Gillespie, Patricia H., and Johnson, Lowell E. Teaching Reading to the Mildly Retarded Child. Charles E. Merrill Publishing Co., Columbus, Ohio, 1974.

4. Goldstein, Herbert. A Curriculum Guide for Teachers of the Educable Mentally Handicapped: The Illinois Plan for Special Education of Exceptional Children. The Interstate Printers and Publishers, Inc., Danville, Illinois, (no date given).

5. Hallahan, Daniel P., and William M. Cruickshank. Psychoeducational Foundations of Learning Disabilities. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1973.

6. Haring, Norris G., and Bateman, Barbara. Teaching the Learning Disabled Child. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1977.

7. Haring, Norris G., and Schiefelbusch, Richard L. Teaching Special Children. McGraw-Hill Book Co., New York, 1976.

8. Hertel, Paula N., and Hertel, Norman W. Learning Disabilities: Getting into the Mainstream. Milliken Publishing Co., St. Louis, Missouri, 1977.

9. Hewett, Frank M., and Farness, Steven R. Education of Exceptional Learners. Allyn and Bacon, Inc., Boston, Massachusetts, 1974.

10. Johnson, Doris J., and Myklebust, Helmer R. Learning Disabilities: Educational Principles and Practices. Grune and Stratton, New York, 1967.

11. Kirk, Samuel A. Educating Exceptional Children. Houghton Mifflin, Co., New York, 1972.

12. Landau, Elliott, D., Epstein, Sherrie L., and Stone, Ann P. The Exceptional Child Through Literature. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1978.

13. Learner, Janet W. Children With Learning Disabilities: Theories, Diagnosis, Teaching Strategies. Houghton Mifflin Co., Boston, Massachusetts, 1976.

14. Mann, Lester, Goodman, Libby and Wiedulholt, J. Lee. Teaching the Learning Disabled Adolescent. Houghton Mifflin Co., Boston, Massachusetts, 1976.

15. Meyen, Edward L. Exceptional Children and Youth: An Introduction. Love Publishing Co., Denver, Colorado, 1978.

16. Meyen, Edward L., Vergason, Glenn A. and Whelan, Richard J. Alternatives for Teaching Exceptional Children, Love Publishing Co., Denver, Colorado, 1975.

17. Meyen, Edward L., Vergason, Glenn A., and Whelan, Richard J. Strategies for Teaching Exceptional Children, Love Publishing Co., Denver, Colorado, 1972.

18. Myers, P. I., and Hammill, D. D. Methods for Learning Disorders. New York: John Wiley & Sons, Inc., 1976.

19. Payne, J. S., Palloway, E. A., Smith, J. E. and Payne, R. A. Strategies for Teaching the Mentally Retarded. Columbus, Ohio: Charles E. Merrill Publishing Co., 1977.

20. Peterson, Daniel L. Functional Mathematics for the Mentally Retarded. Charles E. Merrill Publishing Co., Columbus, Ohio, 1973.

21. Purkey, William Watson. Inviting School Success: A Self-Concept Approach to Teaching and Learning. Wadsworth Publishing Company, Inc., Belmont, California, 1978.

22. Rosner, Jerome. Helping Children Overcome Learning Difficulties. Walker and Company, New York, 1975.

23. Rosenzweig, Louis E., and Long, Julia. Understanding and Teaching the Dependent Retarded Child. The Educational Publishing Corp., Darien, Connecticut, 1960.

24. Stephens, T. M., Hartman, A. C., and Lucas, V. H. Teaching Children Basic Skills. Columbus, Ohio: Charles E. Merrill Publishing Co., 1978.

25. Thorum, Arden R. Instructional Materials for the Handicapped: Birth Through Early Childhood. Olympus Publishing Co., Salt Lake City, Utah, 1976.

26. Valett, Robert E. The Remediation of Learning Disabilities. Fearon Publishers, Inc., Belmont, California, 1974.

27. Wallace, Gerald and McLoughlin, James A. Learning Disabilities Concepts and Characteristics. Charles E. Merrill Publishing Co., Columbus, Ohio, 1975.

28. Waugh, Kenneth W., and Bush, Wilma J. Diagnosing Learning Disorders. Charles E. Merrill Publishing Co., Columbus, Ohio, 1971.

29. Wilson, John A. Diagnosis of Learning Difficulties. McGraw-Hill, Inc., New York, 1971.